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ABSTRACT

Beginning with definitions of land ownership and natural resources, this paper traces United States resource ownership patterns and draws conclusions for rural areas. Following the definitions, a general history of resource ownership discusses disposition of land from government to private owner, noting that the cadastral survey system still in use may have been optimal at time of disposition but can be a hurdle for land assembly today. The paper also discusses economic factors involving valuating resource land; differences between surface ownership and commercial utility; commercial use of public land by private individuals and businesses; changes in farm numbers and sizes; data regarding forest, mineral and water control; and rural development stressing poverty programs. Conclusions note the individual wealth disparity, cover the inability of the poor to effectively exploit what natural resources they may control, and caution that outside help involving natural resource gifts is ineffective without the means to use the resource. An appendix describes the collection of data for the United States Department of Agriculture study on land ownership which was based on a stratified random sample. Comments regarding the paper focus on ownership concentration and suggest investigation into the links between the structure of rural resource ownership, market power, and political power. (PM)

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Rural Development, Poverty, and Natural Resources
Workshop Paper Series

Part IV

Ownership Patterns of Natural Resources in Rural America: Implications for Distribution of Wealth and Income

Marion Clawson
with comments by Robert G. Healy

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PREFACE

In the summer of 1983, with a grant from the Ford Foundation, Resources for the Future convened a workshop on "rural development, poverty, and natural resources." Over forty leading researchers and community development leaders participated in the two-and-a-half day workshop. Workshop discussions were organized around ten commissioned papers, commentators' remarks, and a luncheon address. The papers covered broad issues of rural development, resource ownership and use, and the incidence of poverty and its relationship to natural resources including six case studies focusing on specific resources in various geographic settings.

The workshop papers and the comments on them are available in a six-part series as follows. An overview paper summarizing the key topics and issues discussed will be available in the spring of 1984.

Part I

Sociodemographic and Economic Changes in Rural America, by Kenneth L. Deavers and David L. Brown, Economic Research Service, U.S. Department of Agriculture; with *comments* by Ronald C. Powers, North Central Regional Center for Rural Development, Iowa State University.

Rural Policy: An Independent View, by Edward J. Blakely, Institute of Government Studies, University of California, Berkeley.

Part II

Income Distribution, Poverty, Natural Resources, and Public Policies: Conceptual and Research Issues, by Emery N. Castle and Mark Goldstein, Resources for the Future, Inc.; with *comments* by Philip M. Raup, Department of Agricultural and Applied Economics, University of Minnesota.

Part III

Real Income, Poverty, and Resources, by Irving Hoch, Julie Hewitt, and Vicky Virgin, Resources for the Future, Inc.; with *comments* by Edna Loehman, Department of Agricultural Economics, Purdue University.

Part IV

Ownership Patterns of Natural Resources in Rural America: Implications for Distribution of Wealth and Income, by Marion Clawson, Resources for the Future, Inc.; with *comments* by Robert G. Healy, Conservation Foundation.

Part V

The City House and the Country House: Land-Use Policies and Rural Poverty in the Northeast, by Frank J. Popper, Resources for the Future, Inc.

Coal, Poverty, and Development Policy in Eastern Kentucky, by Cynthia L. Duncan and William A. Duncan, Mountain Association for Community Economic Development.

Development and Management of Forest Resources for Rural Development in the Pacific Northwest, by Joe B. Stevens, Department of Agricultural and Resource Economics, Oregon State University.

Natural and Human Resources: Major Public Policy and Minority Rural Land Ownership, Management, and Use, by T. T. Williams, Richard Morse, and Avery Webber, Tuskegee Institute; with *comments* by Paul Barkley, Department of Agricultural Economics, Washington State University; Brady J. Deaton, Department of Agricultural Economics, Virginia Polytechnic Institute and State University; and Marty Strange, Center for Rural Affairs.

Part VI

Water and Poverty in the Southwest, by Helen Ingram, University of Arizona; F. Lee Brown, University of New Mexico; Gary Weatherford, Santa Clara University; Gil Bonem, the Center for Natural Resource Studies; Steve Mumme, Colorado State University; and Wade Martin, University of New Mexico.

Indian Natural Resource Development: The Impact on Poverty: Overview of Issues, and Proposals for Research by Susan Williams, Fried, Frank, Harris, Shriver and Kampelman; with *comments* by John Folk-Williams, Western Network, and Allen V. Kneese, Resources for the Future, Inc.

The six-part series and the overview paper are available from: the National Center for Food and Agricultural Policy, Resources for the Future, Inc., 1755 Massachusetts Avenue, N.W., Washington, D.C. 20036.

Kenneth R. Farrell, *Director*
National Center for Food and Agricultural Policy

OWNERSHIP PATTERNS OF NATURAL RESOURCES IN RURAL AMERICA: IMPLICATIONS FOR DISTRIBUTION OF WEALTH AND INCOME

by Marion Clawson

A serious discussion of this subject must start with careful definitions of two key words in this title: ownership and resources.

Ownership

In the United States today the common meaning of "ownership" is possession, legal title, and exclusive use of property by the owner or his designated users, with the exclusion of unauthorized persons. "Private ownership generally includes rights to possess, occupy, hold, transfer, buy, sell, mortgage, lease, subdivide, consolidate, use, exploit, conserve, improve, bequeath, and give."[1] The individual's rights are exercised within a legal, political, institutional, and sociological framework. A frequently used concept of ownership is that of a bundle of rights (to land or resources) with separation of the "sticks" within the bundle often occurring.[2]

Ownership of land and associated resources, thus defined, is a western European concept imported into the North American continent by the colonists and immigrants who settled here. The origins of the concept as it has been applied in the western world are in Grecian, Roman, and Anglo-Saxon law and the philosophies which underlie that body of law. The modern concept of ownership has developed in these societies over many centuries. Our concept of ownership was not shared by the native peoples of North and South America, Africa, Australia, and New Zealand, whose concepts of ownership of land and associated resources were very different than ours.

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The disparity in concepts of ownership between the colonists and the natives has underlain the long continued conflicts over land and resources between these two races. In the area of the present United States, the European countries from whom colonists came claimed large blocks of territory almost without regard to the rights of the Indians. The treaties were often not fully understood by the Indians and in any case typically were repeatedly violated by the whites. The Indians did not realize they had sold what we thought we had bought. In effect, we stole the land from the Indians. We are yet struggling with the problems and the injustices arising out of these divergent concepts of land and resource ownership, and an easy solution to the problems does not exist.

In every society at every era the individual land and resource owner was constrained to some degree by society in his exercise of ownership rights, but the degree of constraint has varied greatly over time and in different places. Society, acting through government, has typically asserted the right to a share of the income from land and resources, in the form of some kind of tax, direct or indirect. Society has also asserted the right to take private land, on payment of its value, for public purpose--and the definition of public purpose has changed greatly over the decades. In the United States society has also asserted its police power to regulate the use of private land in order to assure the safety of its citizens or to control externalities arising out of land use.

The extent and the form of society's constraints on private land and resource use have changed greatly in the 200 years of American history. In the colonial period there were a few constraints, even though that was an era of much simpler social controls than now. By the latter 19th century, the pendulum had swung toward the least social controls and the greatest individual freedom to use land. The owner typically had fee simple ownership, from the center of the earth to the zenith of the sky, with the right to use or abuse his land as he chose, with very little interference from anyone. In the past 75 to 100 years, the pendulum has gradually swung toward more and more social controls over land and resource use until today almost all land in the United States is subject to some degree of governmental control--air and water pollution control, if nothing else. Planning and zoning have arisen in hundreds of counties and thousands of cities, great and small; subdivision, building, health, and other codes have

limited what could be done with land or how it could be done. Though social controls have generally been stricter in urban than in rural areas, they have not been absent in the latter. Public services for transportation, communication, energy delivery (power lines), waste disposal (sewers), and other services necessary in the modern world have enormously affected the choices the landowner can or will make for use of his land.

In this connection, it is essential to distinguish legal from political or social control. Laws and regulations, backed up by appropriations and by court decisions, are legal controls. But many a group or person possesses political power either much less than or much more than the legal power. For instance, let someone with title to a property which has or is alleged to have historic value propose to tear it down, even when the owner has full legal authority to do so; the public outcry may be so great as to make the planned action very costly in public relation terms. Many persons or groups with no formal legal powers and without bearing any of the costs of land and resource ownership still assert a political right to oppose private usages of the land and resources involved. Any outcry about tearing down an historic structure can be fully matched by the public outcry about cutting the trees on a privately owned forested hillside in easy view from the highway. The rights and the ability to control private land use are very much in flux these days, with substantial uncertainties about the rights of various persons or groups.

Land ownership conveys economic power, social position, and political advantage to the owner. This is less the case in the United States than it is in most other countries of the world, but it is still important here, especially in local situations. There are, however, in the United States many persons and families who own land for personal satisfactions, rather than for income.

Not only does the nominal owner of land and resources face societal controls of various kinds, which in some degree limit the owner's freedom of choice, but ownership may be divided or shared in other ways also. At one extreme is fee simple ownership, with the owner having legal title not only to the surface but to the subsurface as well. This is the dominant situation in the United States--so much so that many observers think it is the "natural" form of land ownership. In fact, the United States is almost the only country in the world where fee simple ownership is dominant. Even

here, title to surface and subsurface resources is split more commonly than often is realized; not merely did governments retain title to subsurface minerals when the surface rights were disposed of for many millions of acres (as well as sometimes buying surface rights from private owners who reserved the minerals), but private owners have frequently entered into long-term leases for oil and gas or other mineral exploitation by other private parties, while retaining surface rights for themselves.

There is also a confused legal situation in the United States as to ownership of water. Water has been appropriated under state laws in many western states, while in many eastern states where irrigation is less common the riparian doctrine limits the landowner's rights to water on or adjoining his land. How far can he, for instance, retain more water on his land by terraces, ponds, and other small man-made structures, and how far is he obligated to let all water that falls flow "naturally" to streams and other water bodies? The situation as to rights to groundwater is far from clear in many states also.

The rights of the land and resource owner may be compromised or modified by his creditors. Lenders may insist upon certain actions, or insist that certain other actions not be taken; or the probable but not certain reactions of possible credit sources may greatly influence the actions of the land and resource owner. The owner-creditor interface is, of course, hardly new--it has existed for hundreds or thousands of years, with the relative power of each waxing and waning.

The observer or student of land and resource ownership must carefully distinguish between nominal and real ownership. That is, the records may show one name as owner, when in fact there is reason to believe that someone else is the effective owner and decisionmaker. For various reasons, the real owner may not wish to reveal his or her identity. In some cases, the nominal and the real owners are corporations; then who are the stockholders and who actually controls the corporations? If one owns a few shares of stock in a large corporation which owns land and resources, does he or she thereby become a land or resource owner?

The observer or student must also distinguish between owners, persons, and parcels of land. The nominal owner may not be the real owner, as noted. In the United States, a great deal of land is owned by man and wife in common (or practically in common, even when other legal terms are used).

In this case, there are two persons and one owner. To a lesser extent, partnerships exist where there is also more than one person per owner. Owners, whether single individuals or groups of persons, may own more than one parcel of land--a parcel being defined as a spatially distinct tract, separated by some recognizable means from other parcels.

Land has such a peculiarly locational characteristic that often the ownership of neighboring or bordering tracts is highly important. There are some fairly simple externalities or flows of actions across legal boundaries; for instance, noxious weeds, rodents, plant diseases, airborne chemicals, and wild fires have scant regard for ownership boundaries. If an owner wishes to expand ownership for any land or resource use, the neighboring tract is generally the most obvious and most desirable expansion outlet. But the adjoining landowner may not be interested in selling--may, indeed, be desirous of expanding. The usual statistics on land and resource ownership include no information on neighbors; such information would be difficult to compile in simple form, but it would often be most useful.

Finally, it should be recognized that there may be a considerable difference between the legal rights of an owner, as expressed in law, and the actual situation on the ground. Trespass is common and serious in some regions and for some land uses. Many persons illegally enter land to enjoy there some service--hunting, for instance--or to remove some product--firewood, for instance. Persons who own forested land for personal recreation, but do not live on the land, may experience so much trespass and destruction of improvements as to make the whole enterprise unsatisfactory. Trespass is less upon occupied land and structures but surely not unknown there. Trespass is often difficult to detect until damage has been done and is often very difficult to prove in court.

Resources

Natural resources are man made by inputs of technical knowledge, entrepreneurship, labor, and capital to the natural features of soil, climate, topography, and minerals. Zimmermann, in an oft-quoted statement, says:

> Resources are highly dynamic functional concepts; they are not, they become; they evolve out of the triune interaction of nature, man, and culture, in which nature sets outer limits, but man and culture are largely responsible for the portion of physical totality that is made available for human use....the world is not "a bundle of hay" but a living, growing complex of matter and energy, a process rather than a thing.[3] (emphasis in original)

Barnett and Morse, in their extensive exploration of resource availability, come to the same general conclusion, namely that "resources" are a rather elastic concept, since the same physical sources can produce greatly differing amounts of output, depending upon the other inputs. Their extensive analysis is not easily captured in a single quotation but the following may suggest their conclusions:

> In short, the resource problem is one of continual accommodation and adjustment to an ever-changing economic resource quality spectrum. The physical properties of the natural resource base impose a series of initial constraints on the growth and progress of mankind, but the resource spectrum undergoes kaleidoscopic change through time. Continual enlargement of the scope of substitutability--the result of man's technological ingenuity and organizational wisdom--offers those who are nimble a multitude of opportunities for escape. The fact of constraint does not disappear, it merely changes character. New constraints replace the old, new scarcities generate new offsets.[4] (footnote in original omitted)

In my efforts to think through the problems of resource availability and scarcity, I devised my own definition, as follows:

> ...a definition of natural resources...includes four parts: (i) any quality or characteristic of nature, (ii) which we know how to use, (iii) economically, and (iv) to a desired end.[5]

I include in the last part of the definition all of the cultural or social constraints and attitudes which affect resource use. Economics is highly important but it is not the only consideration. People often have objectives other than income.

These three statements are in different terms but they have a common core of meaning. Natural features of any kind may be useful, even necessary, but they alone are not enough. It is the combination of natural features with the inputs of knowledge, entrepreneurship, labor, and capital

which creates the resources. True enough, some natural features are more easily used than are others, but all require inputs for human use. From this general relationship or definition flow at least three corollaries of importance for the present subject:

1. What is a "resource" to one owner or user may not be to another owner or user, if the latter lacks one or more of the essential complementary inputs.

2. A shortage of "resources" may measure a shortage of the necessary input factors as much as, or more than, it measures a shortage of the natural features.

3. More land, forests, minerals, or water for some resource owner or user would not necessarily much increase the annual income potential of such owner or user if the complementary inputs remained in limited supply. Or, put differently, the focus of public attention on the problems of poverty should perhaps be on the complementary inputs, not primarily upon the physical resources.

Generalized History of Resource Ownership in the United States

The present areas and characteristics of resource ownership and the present pattern on the land of the ownership units in the United States reflect the history of land ownership. All private ownership of land and related resources began with a transfer of title from a European nation, an American colony, a state, or the federal government of the United States to some individual or group.

Nearly all the land disposed of by the federal government and much of that disposed of by Texas had a rectangular cadastral survey as a basis for dividing the land into parcels. That survey has left its indelible mark on the face of much of the United States. Land exchanges or transfers in the original public domain states since the initial government-to-private transfer have been made in terms of the property boundaries established by that survey; it seems highly probable that all future transfers will also be in terms of the same parcel boundaries. Moreover, highways, farm boundaries, rural residence locations, rural power lines, and many other aspects of modern living have been and are significantly affected by the lines established in the original cadastral survey.

For the most part, the disposals from the federal government to private ownership were for relatively small parcels and for parcels in units determined by the cadastral survey system--40, 80, 160, 320, and 640 acre parcels. Even when the federal government transferred large acreages to states and to railroads, the separate parcels were generally 640 acres (a square mile) or less. The railroads typically got checkerboard grants--one square mile to the railroad, one retained in government ownership for separate disposition. The state grants for common schools were all (except Nevada) for 640 acre tracts. When the railroads sold their lands, they utilized the same cadastral survey division of the land into tracts and generally sold the land in comparatively small tracts--160 acres, frequently. Most of the sales by the federal government to individuals were also in tracts of similar size.

Federal and state laws for disposition of land to private ownership typically paid little attention to the physical characteristics of the land or to the uses planned for it. This was particularly marked for forested land if it was to be continued in forest use and managed for that purpose, and for grazing land similarly. The mining law provided for relatively small claims--about 20 acres for lode claims. The federal government established townsites on a fairly large scale and many mid-western and far western towns were originally laid out by the General Land Office. There, too, the original cadastral survey and street layout has persisted.

The size of parcels in the original disposition from government to private ownership may or may not have been optimum then. A good deal of the farmland in the Plains was homesteaded in 160 or 320 acre tracts. This area is hopelessly too small for an efficient wheat farm or an efficient ranch today. But in the days of horsedrawn farm machinery--the moldboard plow, the grain drill, the binder, and the stationary thresher--this was not an unreasonable farm unit. In other areas, homesteads were always too small for economic operation and homesteads were combined into much larger farm operating units. Gates discussed the operation of the Homestead Act in some detail.[6] A substantial proportion of the original entries were never carried to completion, but rather were relinquished. Many others were commuted by the payment of a very modest cost per acre, without completing the residence or cultivation requirements; this avenue was pursued by many of the timber companies and other large landowners, who in this way

sought to obtain land for which no adequate law for transfer of such lands existed. Gates has shown further that the maximum number of farms in several western states was never anywhere near as large as the number of completed homestead entries; substantial consolidations of ownership occurred, even at these comparatively early stages in western history, in order to assemble enough land for an efficient ranch unit.

Even if the tracts as originally disposed of were an optimum size at the time of disposal, changes in technological, economic, and social aspects of modern life have nearly always operated to increase the size of the optimum economic land and resource unit. But there are serious obstacles to land assembly and serious lags in adjustment to changed conditions; the size of tracts and their boundaries in the first government-to-private transaction continue to be serious hurdles in such adjustments. Land is peculiarly fixed in location; the landowner seeking to expand ownership wants conveniently located land, not merely land in general. Modern transportation technology--motorized transport and rubber-tired vehicles (including farm machines)--has somewhat relieved the tyranny of land location, when economic adjustments in land and resource ownership are sought, but land location is still extremely important and the patterns of the past still inhibit ready adjustment in land and resource ownership and operation. It is hard to see how it could have been otherwise; whether one criticizes or defends the land disposal process as it actually operated, it must be granted that almost any process would have imposed its pattern long after the original disposal was completed.

Resource Ownership in the United States Today

It is difficult to describe the ownership of natural resources in the United States today, in ways which are both accurate and clear. First of all, it is essential to distinguish between land ownership and land control. A tenant may have effective control but not ownership; an owner my lack capital or managerial competence to use his land efficiently, and thus is likely to lose control over it. From some viewpoints, control may be more important than ownership.

One major problem concerns the units of measurement of land and associated resources. The obvious unit is acreage (or hectares) of land

surface. Aside from data deficiencies, described later, this measure implicitly assumes that one acre of land is as important as any other acre, while common experience reveals that this is not the case. There are perhaps 100 million owners of land parcels within or closely adjacent to cities and other urban concentrations, who in total own only a very small percentage of the total national land area. Does this prove, or suggest, an absence of desirable equality in land ownership? The fact that the total national value of urban land (without buildings) is substantially greater than the total national value of all rural real estate clearly suggests that the apparent concentration of land ownership in relatively few hands is more a result of the unit of measurement of than it is evidence of disparity in economic resource ownership. Among rural lands, the value of the best Corn Belt cropland is several times as high per acre as is the value of the extensive natural grazing areas of the West.

The deficiencies of surface area as meaningful measure of economic natural resource ownership suggest the use of value data as the measure of resource ownership. But value data are often not easily available or are to some degree suspect. Transactions in land may be few or may not meet the standard test of a bargain between a willing seller and a willing buyer dealing at arms length; or data on such transactions as do occur may be hard to obtain. In the absence of trading, estimates of resource value may be dubiously realistic. Later, some data on land ownership by value classes will be presented, but widespread use of value instead of area as a measure of resource ownership may not be possible.

In any collection or analysis of data on natural resource ownership, one question concerns the minimum acreage or minimum value per unit that should be recognized. Should every last little scrap of land or other natural resource be recognized as a separate unit, or should there be some minimum acreage or minimum value below which no consideration is given in ownership data? This problem is far from trivial, as later data illustrate.

The gross or raw data on resource ownership, whether measured in terms of area or of value, may not be very meaningful in an economic or social sense. What does it mean to say that some percentage of landowners had more than 5 but less than 10 acres of land? If it is general farmland in the United States, the probability is that such a unit is far too small for

economic support of an individual or a family; if it is highly productive citrus-growing land, it may still not be an ideal economic unit but its income prospects are far better; and if it were a tract of farmland in many a low-income county, it would appear as riches or something close to riches. A family-size ranch may require ownership or control over several thousand acres of land.

Ideally, natural resource ownership should be compared with some concept of optimum economic unit, if rational judgments on resource ownership policy are to be made. But economic units change over time, as well as between locations, and comparisons of actual ownership to concepts of optimum economic units are at best difficult.

A priori, one would expect to find a substantial concentration of natural resource ownership in any country or area where there existed an unequal distribution of wealth and income. The United States has a very unequal distribution of both wealth and income, among individuals. People with wealth are more likely to own land and other natural resources than are poor people. But do they own such resources because they are wealthy, or are they wealthy because they own the resources? The answer to this question obviously is significant for national policy. If people are poor because they do not own natural resources, one answer to poverty would be to assist their ownership of natural resources. If they do not own resources because they are poor, then increased ownership of resources may not be the best answer to their problems of poverty.

One would also expect the natural resource ownership situation in the United States in the early 1980s to have been greatly influenced by the several years of relatively high, even mounting, inflation during the 1970s and by the common expectation that high rates of inflation would continue. In a period of high inflation, ownership of real property may well be a good means of protecting real values of capital owned by individuals, and at times, of increasing those real values. There is ample evidence that farmland, residential property, and other natural resource values all rose sharply during the 1970s, and good reason to believe that expectation of future inflation played a major role in such price rises. If one expects natural resource values of any kind to be higher next year than they are this year, then naturally enough one bids up the price this year. Acquiring ownership of natural resources under these conditions is greatly af-

fected by credit availability and terms; during the 1960s and 1970s these were both favorable for ownership of farm real estate and of residential property. But, even under the most favorable credit terms, some amount of owned capital is needed to get into the game of speculative resource ownership. One would therefore expect (1) that the ownership of natural resources today would be much affected by the inflationary history of the 1970s, and (2) that the disparities in resource ownership, caused by differences in wealth of different persons, would have increased during these years.

The data on ownership have traditionally been among the fewest and the weakest of all data concerning land and other natural resources. Surveys for particular local areas or regions or for particular time periods or for particular purposes have been made by various agencies or groups but they have not been sufficient to present a comprehensive picture of resource ownership nationally at any date and especially no such picture over a period of time. Fortunately for our purposes, this situation has been remedied in considerable degree by a recent USDA comprehensive study of land ownership in the United States, supplemented by several special analyses of the data so obtained. The basic report on this inquiry is by Lewis.[7] The report on forest land ownership is by Birch et al.[8] These are supplemented by several reports on special aspects or special relationships.[9] While the origin of these reports is agricultural and while the focus is upon agriculture and related rural land uses, the effort was made to include all rural land and all aspects of land use and land ownership. Some specific or suspected shortcomings of this study are noted later but it must be recognized that this study advances our knowledge of U.S. natural resource ownership in a truly major way. (See the appendix to this paper for how the USDA data on land ownership were collected.)

When the sample data were expanded to regional and national totals, this study of landownership reports nearly 34 million private landowners, owning in total 1,345 million acres of land, or an average of 40 acres per owner. When the more than 26 million owners of fewer than 10 acres are excluded, the remaining slightly more than 7 million owners had an average of nearly 180 acres each. Individuals as sole proprietors and husbands and wives as joint proprietors each comprised about 45 percent of all owners, or 90 percent in total; each owned about a third of all land, or two-thirds

in total. In addition, family partnerships and family corporations (with 10 or fewer stockholders) possessed a significant additional acreage. Nonfamily corporations were less than 3 percent of all landowners but they did hold more than 11 percent of all land. More than a third of all owners with generally usable replies to the questionnaire did not report value of their land holdings, thus emphasizing the difficulty of using value rather than acreage as a measure of size of holding. It is highly probable that owners not reporting land value were not a r dom sample of all owners. For those owners who did report value, the average value per acre for all land (including value of buildings) was almost $2,000.

The survey reports that 2.6 million farmers (including farm managers and farm laborers), or about 8 percent of the landowners, owned over 500 million acres of land of all kinds, or nearly half of the private non-corporate land in the nation, or almost 200 acres each, on the average. White collar workers, blue collar workers, and retired persons were each several times as numerous as the farmer group; in total they included nearly three-fourths of all owners but they owned slightly less land than did the farm group, or slightly less than 20 acres each on the average. Farmers are one-fourth of all owners of farm and ranch land, but they own 56 percent of all such land. Retired, white collar, and blue collar owners of farm and ranch land are each nearly as numerous owners as are farmers but their total holdings are only 38 percent of the farm and ranch area.

Virtually all the landowners reporting their citizenship were U.S. citizens; nearly 83 percent of the owners were males. Land ownership is comparatively uncommon until the owner is thirty-five years of age but it continues at relatively high levels into the group aged seventy-five and over. Seven-eighths of the owners live in the same county as the one in which the land is located. A seventh of all owners did not report their education; of those who did report, about a third of them have formal education beyond high school. About 60 percent of the land owned had been purchased from a nonrelative, with most of the rest inherited or purchased from a relative. At the time of the survey, the average number of years the land had been owned was about 15; based upon the frequency distribution of length of ownership, one may judge that the average length of ownership (until disposal by sale or by bequeathment) would not exceed thirty years

and might be no more than twenty-five years. Nearly three-fourths of those responding had but a single parcel of land.

Nonresponse was particularly serious for the income of the landowners--it often is one of the more sensitive items in any survey. The data are further confused because the report shows the distribution of individuals according to the amounts of farm income and according to the amounts of nonfarm income received, but not according to total income received. The degree to which those with high farm income had low nonfarm income, and the degree to which those with low farm income had high nonfarm income, and the degree to which other combinations existed, are unknown. However, the available data do suggest that most landowners had relatively modest annual incomes--perhaps nearly half in the range of $3,000 to $20,000 (in terms of 1978 dollars, since the survey was made in 1978). About 8 percent of the landowners were retirees, and their incomes may have been relatively low because of their retirement but they may have had modest or larger savings, some or much of which were in land.

The overall picture which thus emerges is one of rather widespread ownership of land, since the number of owners over twenty-five years of age is nearly 23 percent of all adults in the same age range in the United States; among adult males, landownership includes nearly 40 percent of total numbers; and among adult white males the percentage is still higher. These data do not include tracts of land less than one acre in size and do not include land in the larger cities and towns. If these had been included, ownership would have included a substantially larger percentage of the whole population.

The USDA study is weak as far as data on landownership by minorities is concerned. Nearly 3 million owners, or 8.9 percent of all respondents, did not respond to the question as to their race, compared with 7.5 percent who reported themselves as something other than non-Hispanic whites. It is highly probable that the nonrespondents were not a random or average nationality or ethnic group. Those who regarded themselves or were regarded by the community as non-Hispanic whites would be likely to report; those who regarded themselves or were regarded by the community as something else would be less likely to report their race or ethnic group. Accordingly, the results which follow have an unknown but perhaps serious statistical bias. At the extreme, the actual number of persons in minority

groups might be double the number reporting; and the nonrespondents might have a greatly different land ownership than did the respondents.

Of those who did report race, somewhat more than 1 million, or about 3.7 percent of all respondents, were black; they owned less than 1 percent of the total land area, or slightly less than 9 acres each of all kinds of land. Some of this was most probably not cropland. Obviously, not many blacks--on the basis of these data--owned full size commercial farms. At an earlier period, blacks were closely involved in agricultural production but as tenants and sharecroppers rather than as owners. There is little reason to think that black ownership of farmland is rising, and it more likely is declining. For whites of all ages, 14 percent own land; for blacks of all ages, only 4 1/2 percent own land. The unsuitability of acreage as a measure of economic ownership of land should be recalled; the data are unavailable to judge whether blacks own more or less valuable land, on the average, than do whites.

Land ownership was reported for 845,000 Hispanics, or 2.7 percent of all land owners; their average holdings were about 9 acres of land of all types. The data on Hispanics in the whole population are too poor to draw a firm conclusion, but it may be that landownership is somewhat more common among Hispanics than among blacks.

The USDA survey picked up only 134,000 Indians and Alaska natives, but it omitted reservations where many Indians live and where nearly all the land is owned by Indian tribes. Tribal tenures are different than individual tenures. Some tribes have highly valuable natural resources but others are very poor in resources. The tribe, as for instance the Navajo, may have a considerable amount of valuable natural resources, yet the individuals--again as the Navajo--may live in bitter poverty. The natural resource ownership/per capita income situation on many Indian reservations presents a graphic illustration of the point made earlier that the natural materials are insufficient--that they must be combined with capital, labor, and managerial competence to be productive resources.

The USDA survey reports nearly 1 million, or 2.7 percent of all landowners, as nonfamily corporations; they owned over 11 percent of all land, with an average ownership of about 160 acres. While this is a smaller average acreage than individual farmers reported, it is likely that corporations owned comparatively a lot of mineral, commercial, and other

relatively valuable land. On the basis of these data, it is evident that corporations are not dominant in the national landownership picture, but in many local situations a corporation or a very few corporations may be socially, politically, and economically dominant. This has been reported, in other sources, to be the case in coal mining communities in Appalachia and in metal mining communities in the West, but there are no data on this point in the USDA study.

There is a substantial concentration of ownership, more marked on an acreage than on a value basis (figure 1). If all the urban and suburban landowners had been included, the concentration on an acreage basis would have been still more extreme, but the concentration on a value basis would have been much less. None of these data touches the matter of how the actual ownership compares with ownership of economically optimum units--for any use.

The forest ownership report was based on a subsample of the larger sample of ownership of all land; about 11,000 of the 37,000 of all landowners reported forest land, and these were subjected to a special analysis and the results presented in a special report. Generally speaking, the conclusions with respect to ownership of all land apply to the ownership of forest land--many owners, resident within the county, modest formal education, greatly varied occupations, mostly in the latter half of the normal age span, with some retired, mostly acquiring land by purchase from a nonrelative, and with an average length of ownership somewhat shorter than for all landowners. The concentration of ownership among the forest owners was only slightly less than the concentration of ownership among all owners (keeping in mind that the all owners also included the owners of forest land) (figure 2). For the forest land 71 percent of the owners had less than 10 acres and 86 percent had less than 50 acres; but 78 percent of the forest area was in ownership units of 100 or more acres. While this survey did not attempt to obtain any estimate of economic size of forest landholding, other studies lead to the conclusion that the relatively high concentration of ownership in units of 500 or more acres (40 percent of the total) and 78 percent in units of 100 or more acres means that much of the private forest land is held in ownership units sufficiently large to produce harvestable quantities of timber at intervals and to provide significant income to the landowner.

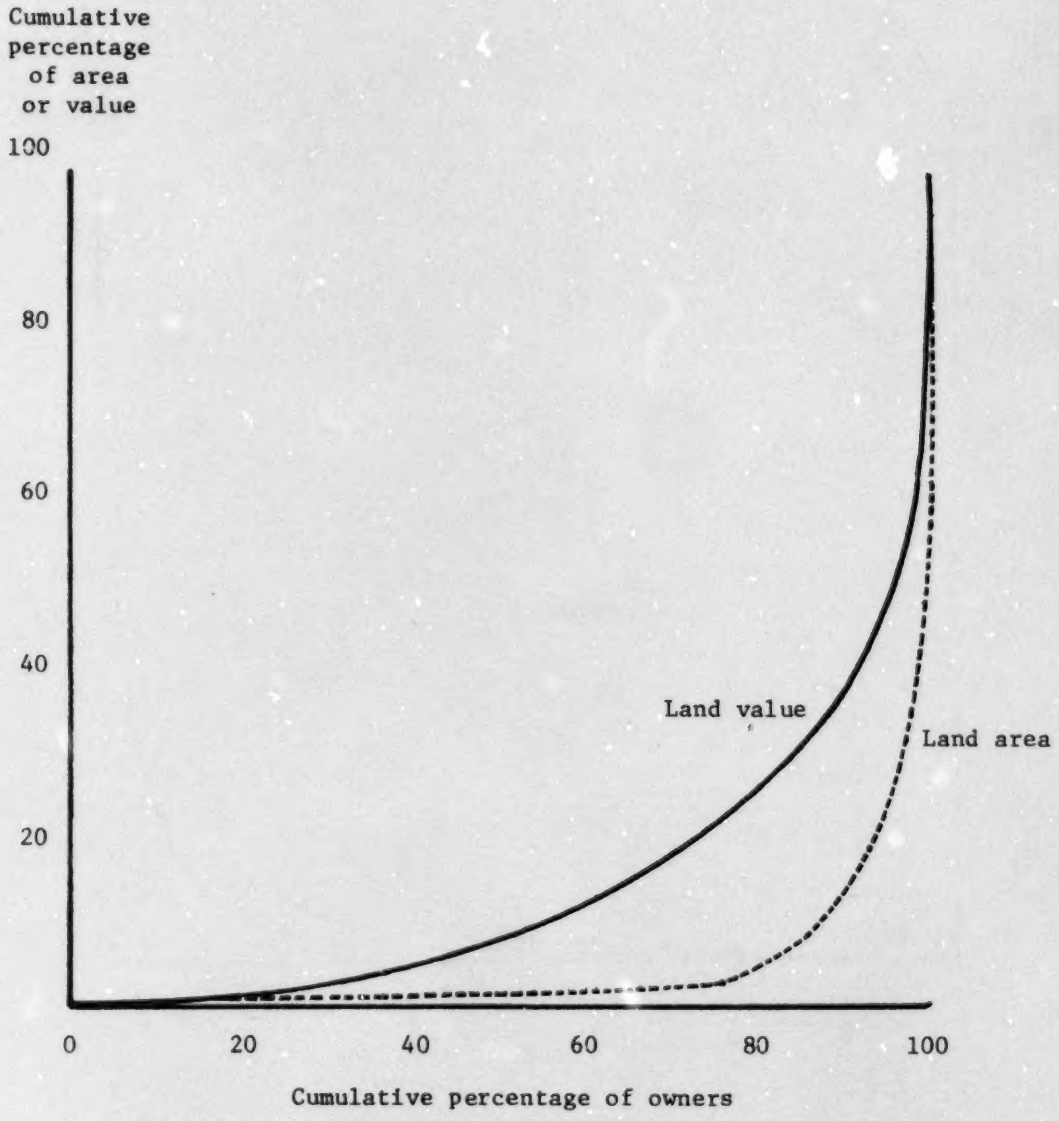
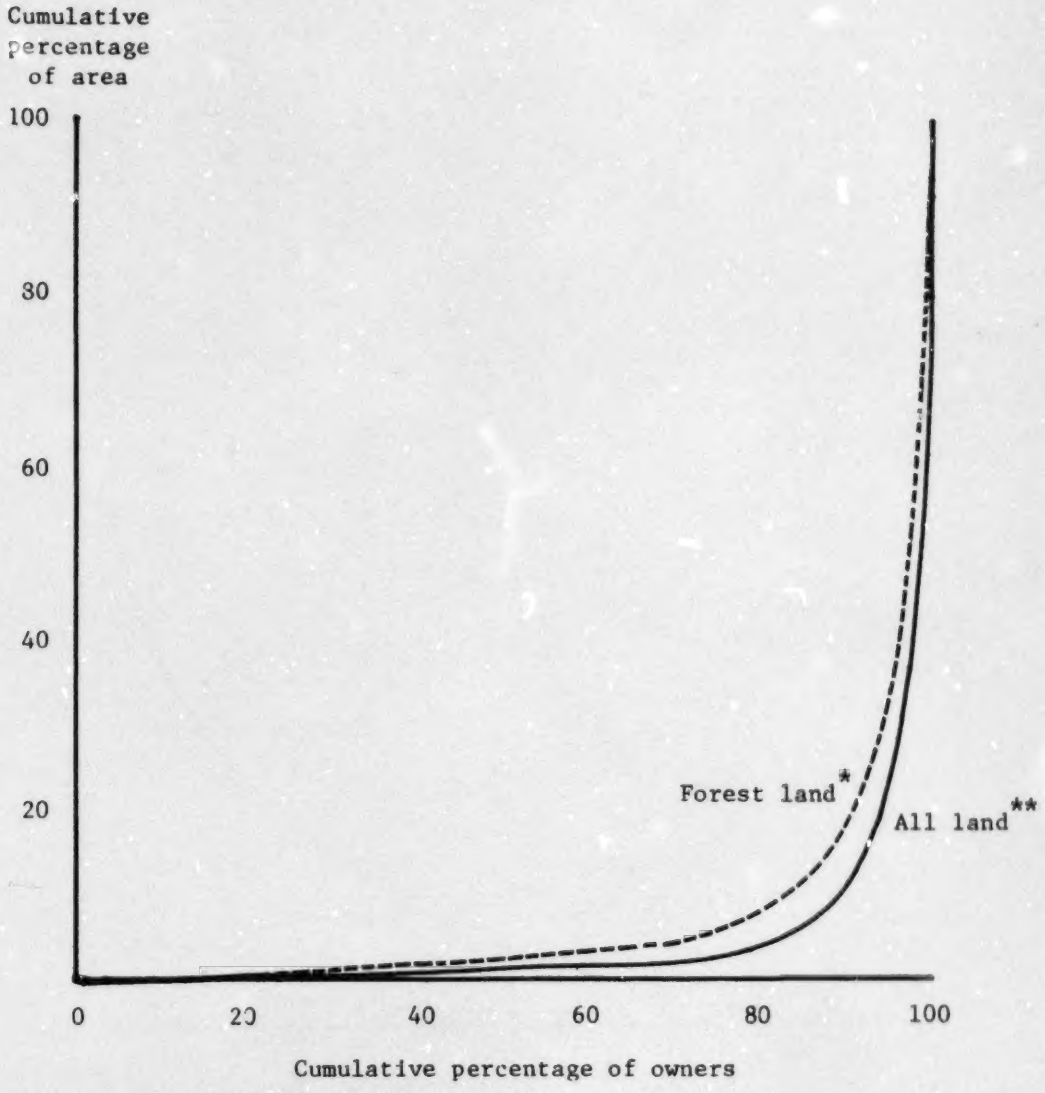


Figure 1. Concentration of Ownership of All Lands as Measured by Acreage and by Value, 1978



*U.S. Forest Service, Forest Service Resource Bulletin WO-1, p. 36.

**USDA, Agriculture Information Bulletin no. 435, p. 15.

Figure 2. Concentration of Ownership of All Land and of Forest Land in the United States, 1978

The USDA inquiry was concerned with ownership of land surface; it was not a study of mineral ownership. Difficult as are studies of ownership of land surface, studies of mineral ownership are enormously more difficult. Surface area is only marginally important for consideration of mineral ownership; the volume and the characteristics of the mineral deposit are far more important. These are often imperfectly known even for properties undergoing mineral development. Until ore or other deposits are actually extracted, there is a considerable measure of uncertainty about them. The imperfections of data about minerals for properties believed to have significant minerals but not yet under development are much greater. In addition to the imperfections in the data as such, the owners of minerals are, in general, far less willing to make public the information they possess about their mineral deposits than are owners of surface rights willing to provide information about their lands.

In many situations the owner of the minerals is not the owner of the land surface and in many other situations the mineral developer has the minerals under long-term lease, without full ownership of either minerals or surface. For instance, many oil and gas developments are made under relatively long-term leases with a common provision that the lease shall remain in effect as long as oil and gas are produced in paying quantities. While this is short of complete land ownership, as far as the developer is concerned it has all the valuable attributes of ownership. Minerals actually under development or believed to be suitable for comparatively early development are, as far as is known, owned, or at least leased, in comparatively large acreage blocks or volumes. Nearly all kinds of mineral development today require large amounts of capital, much technical competence, and present high risk of loss as well as large opportunities for gain. It is no game for the small individual owner or producer. For lands not yet known or generally believed to have exploitable minerals--farmland in areas where there has not yet been oil and gas development, for instance--the ownership pattern for the potential minerals is governed by the same factors that govern the ownership of the land surface.

Data on water ownership are widely scattered and hard to interpret; there are no such data in the USDA study. Water is often described as a "fugitive resource," meaning that the supply may be highly variable from year to year. In some states, ownership of land surface is also ownership

of underlying groundwater; but, depending on the geology of the area, water from under one owner's land may be drawn by pumping from neighboring tracts. Water in streams and lakes may or may not be legally appropriated or under engineering control, by laws, court actions, or agency determinations and actions. In many areas of the West, ownership of irrigated land is one measure of water ownership but even here there may be requirements as to return flows which severely limit the use or disposition of the water by the landowner. Even in the West and more so in other regions, water is used for purposes other than irrigation, and requirements as to quantity or quality of water used or returned by the user to the stream may greatly affect the use and value of the water to the primary user. Although data on ownership of water are unavailable or not easily available from their scattered sources, my judgment is that the ownership of water is as unevenly dispersed among individuals as is the ownership of land.

In conclusion for this section, the fact that the data relate to land ownership and not to control over land must be stressed again.

Trends in Resource Ownership

Data on historical trends in resource ownership are more fragmentary than are data on present resource ownership. In some cases, data on other matters may be used as an indicator of probable trends in resource ownership. And in some instances one can be fairly sure of trends although statistical data are lacking.

First of all, public ownership of land and associated natural resources has expanded slightly over the past fifty years of so. Appropriations and bond issues have provided the money for some purchases of land, especially for parks and recreation, by federal, state, and local governmental agencies. The U.S. government acquired a large area of valuable "land" when it asserted its proprietary right to the outer continental shelf.

Much more significant than the changes in area of public land have been the great increases in public use of such land. Outdoor recreation visits have gone from about 6 million annually in national forests in the mid-1920s to about 230 million in the period around 1980. The increase in recreational use of the national park system, state parks, federal reser-

voirs, federal wildlife refuges, and other publicly owned areas has been more or less proportional. The data on visits count each visitor each time he or she enters another area, hence the number of persons enjoying these visits is smaller by an unknown but considerable percentage. Nevertheless, a substantial proportion of the whole populace is able to take advantage of public recreation areas; while they do not own such areas, except as citizens in the unit of government which does own them, the users still have many of the advantages of resource ownership--and comparatively few of the headaches or costs of ownership.

Publicly owned resources have come into increasing use by private individuals for production of commercial raw materials. Timber harvest from federal lands reached about 2 billion board feet annually in a few of the housing boom years of the 1920s; thereafter it declined sharply until World War II, during which timber harvest for military supplies increased considerably. The postwar housing boom was made possible, in part, by timber harvested from federal forests. Such harvest reached 12 billion board feet by 1966; it has since declined somewhat but still ranges around a 10 billion board foot level annually.

The production of oil, gas, coal, and other leasable minerals from the federal lands, including the outer continental shelf, has risen greatly in the past two decades. A detailed analysis of this mineral development is not needed for the purposes of this paper, but it may simply be pointed out that the minerals so developed are a significant part of the national supply and that the money obtained by the federal government from their development is large.

For the most part, harvest or utilization of commercial raw materials from public lands calls for business enterprises of some size. There have been "set-asides" reserving some federal timber for purchase by "small business" firms but the definition of a small firm enables it to employ as many as 500 workers. Exploitation of the outer continental shelf in particular requires very large capital investments and is very risky--large losses and large gains equally possible.

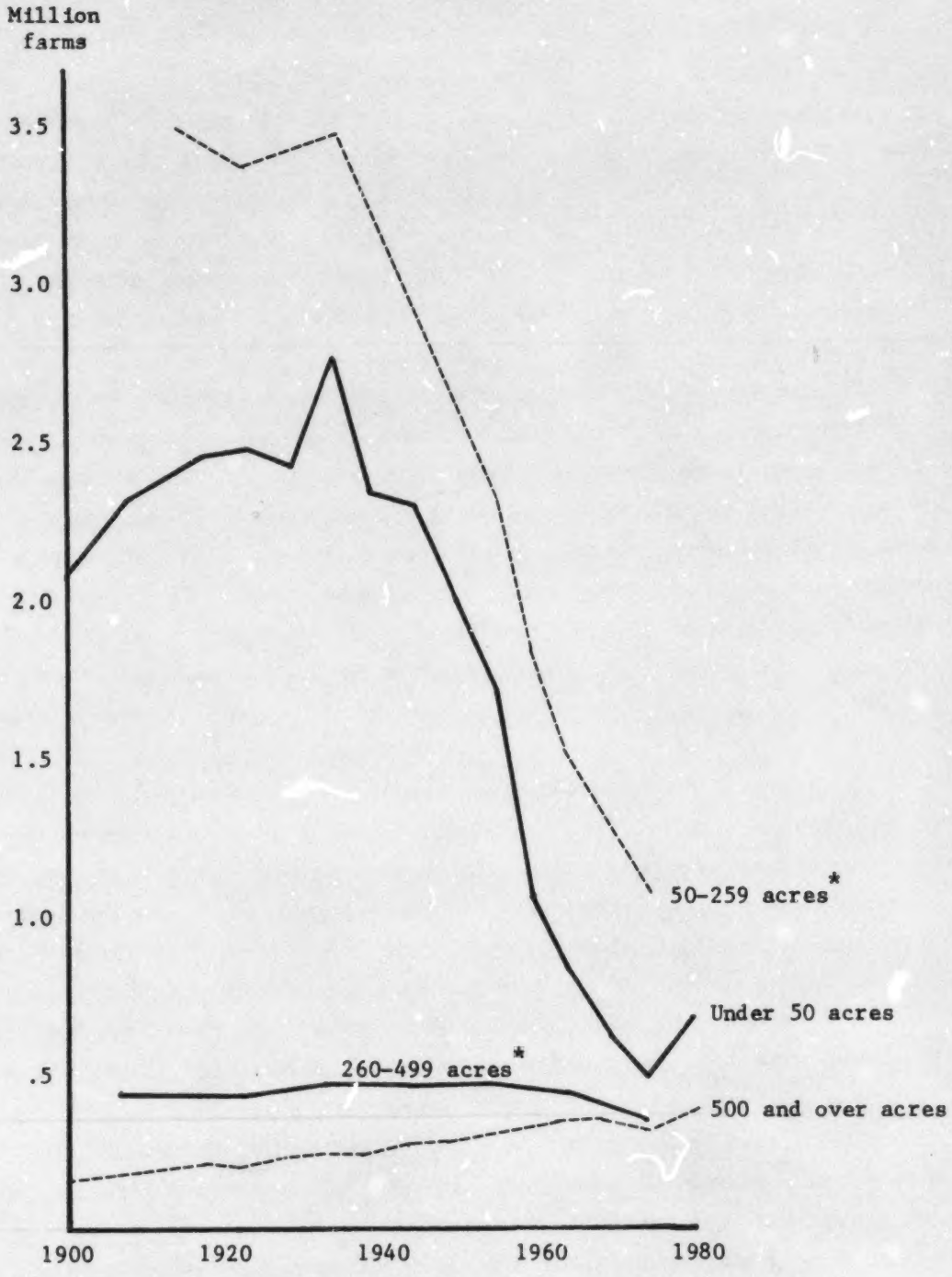
By far the largest user of privately owned land has been, and is today, farming, especially if one includes here the grazing of domestic livestock on native ranges (ranching) and also includes growing of trees in farm forests. There are reasonably accurate and detailed data on farming

from the Census of Agriculture, for 100 years. Such data relate primarily to farms as producing units or management firms, and only indirectly to ownership of land. There are data on numbers of farmers who own but do not rent land and on acreages of land so used; there are also data on numbers of farmers who own some land and rent some; and on numbers of farmers and acreages for those who rent all the land they farm. There are no data in the Census of Agriculture on land owned by farmers but leased out to others. The Census of Agriculture has never been designed as an instrument for the study of land ownership but one can make some inferences about the trends in farmland ownership from the available data on numbers and acreages of farm operating units.

The total land area in farms as reported by the Census has risen from about 900 million acres before World War I to about 1,200 million acres in recent years. Much of this increase in total farm acreage occurred during and after World War II and to a considerable extent represented a shift in the legal status of land without a corresponding shift in its use. That is, in the earlier period there was a good deal of land, especially in the Plains, owned by absentee owners who made no use of the land themselves; rather, much of this land was grazed by the livestock of established farmers, almost as if it were public land. As farm incomes rose after the war, many farmers decided to acquire title to the land they had been using. There are other explanations for some of this increase in total farm area. It should be noted that this increase in total farm area was independent of changes in acreage of cropland.

Far greater than these shifts in farmland use and thus probable shifts in farmland ownership have been the substantial decreases in numbers of farms, which for three decades before the end of World War II averaged about 6 million; farm numbers today are down to about 2 1/2 million. The largest decreases in farm numbers have come in farm tenants, especially in the sharecroppers who were numerous in the South a generation ago, but there have been decreases in farm tenancy in other regions also. Many farm operators today rent some land as well as farmland they own--usually called part-owners, they could equally well be called part-tenants.

The decreases in farm numbers have varied greatly according to the total acreage of land in the farm (figure 3). Farms of 260 to 499 acres (total area, not cropped area) have remained remarkably constant in total



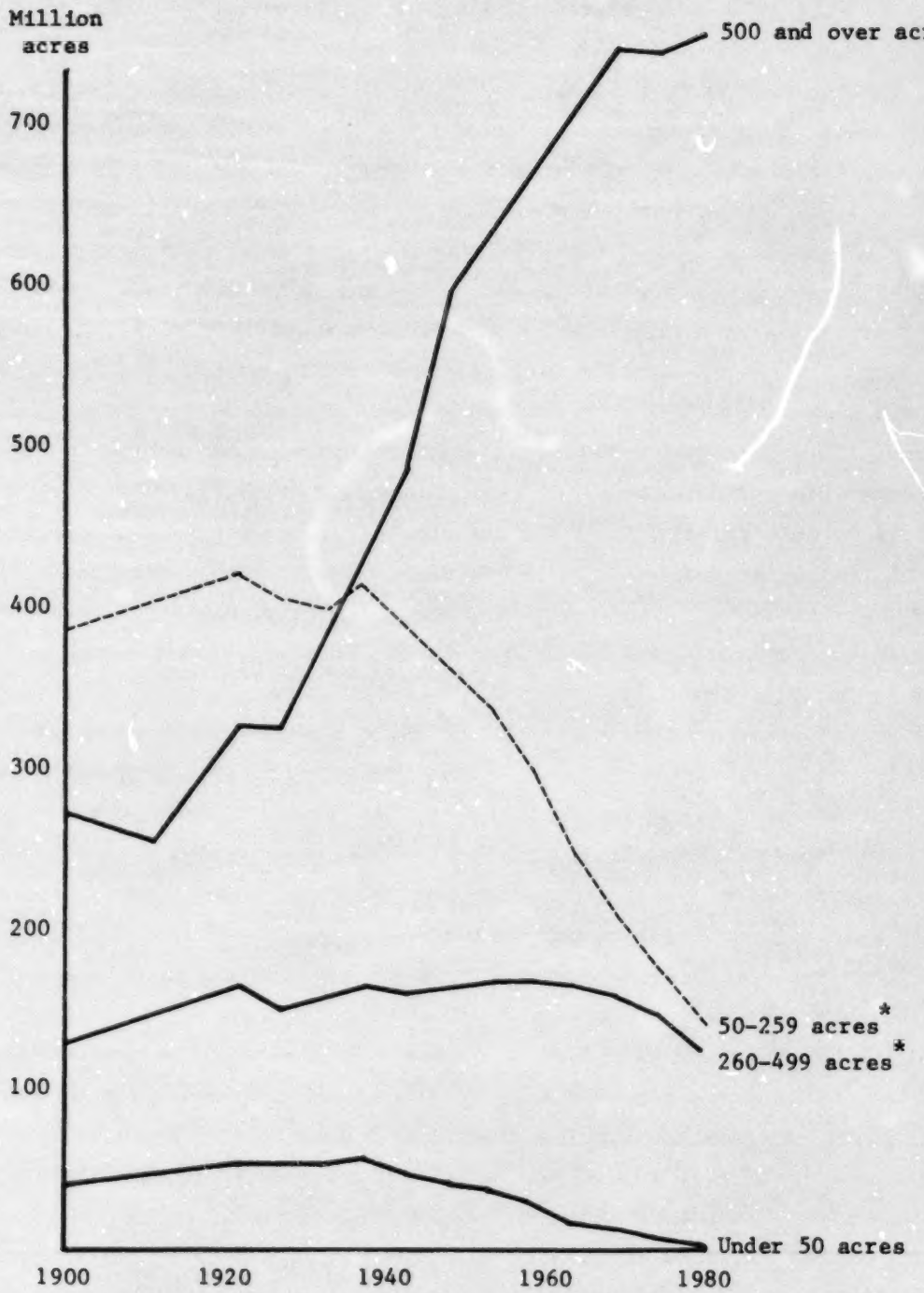
*For dates for which data were not available, line has been drawn directly from earlier to later date.

Figure 3. Number of Farms, by Acreage Groups, Census Dates, 1900-1978

numbers, at slightly less than half a million. Farms of 500 acres (total area) have increased by nearly three-fold since 1900. Smaller farms have decreased dramatically in numbers, to about a fifth of their peak numbers by the present date. There is some hint of an increase in numbers of the very smallest farms in recent years. This may be caused by the return to rural areas of previously urban population, with the persons involved eager to do a little farming while primarily pursuing other means of earning a living. Available data show that farmers and members of their families increasingly work away from the farms to earn a considerable part of their total income.

The changes in farm numbers are more or less matched by the changes in total farm acreage by size of farm (figure 4). Again, the farms of 260 to 500 acres total area have been remarkably constant in land acreage since 1900, at about 150 million acres total. The farms of 500 and more total acres, while increasing about three times in number, have increased about three times in total acreage also. The biggest decline in acreage has been in the farms with 50 to 259 acres total area, their total falling to less than half what it was. While the acreage in the smallest size farms has declined greatly in relative terms, the actual acreage change has been smaller.

The changes shown in these two charts are net changes; they do not measure what had happened to individual farmers. They are changes in land use and control, and only indirectly in farmland ownership. That is, the increased numbers of farms of 500 or more acres total area probably represent the addition of many farmers from the next smaller class who were able to expand their farms by land purchase or by renting. The comparative stability of the 260-to-499 acre class of farmers must have involved some losses as some of these farmers graduated to larger holdings while numbers in this class were augmented by smaller farmers increasing their ownership in order to move into this class. The figures on net changes in farm numbers by size groups are, we hope, accurate; but they do not measure the changes in the fortunes of individual land users or owners, matters which might be of great interest for some policy issues. The decline in numbers of smaller farms probably means that their land was absorbed into larger farms--data on total farm area suggest this; but this tells us nothing about what happened to the operators of such small farms. These data might



*For dates for which data were not available, line has been drawn directly from earlier to later date.

Figure 4. All Land in Farms, by Acreage Groups, Census Dates, 1900-1978

be interpreted as showing a worsening of the position of the small yeoman farmer; they might equally be interpreted as showing a freedom from back-breaking poverty on a submarginal farm by migration to a better paying job in town. In a great many instances, the decline in numbers of small farms meant that the sons and daughters of the farmer refused to continue to operate the small farm after his death; the decline mostly meant a refusal of young people to enter farming when the income prospects were poor, rather than an actual withdrawal from farming by an older farmer.[10]

These changes in farm numbers and farm acreages fairly clearly show some concentration of farmland within larger farming units. The operators of these larger farms had at least some degree of control over larger areas of land. These changes probably also indicate some concentration in farmland ownership over the past two generations, although the data are not directly to this point. There has perhaps been some dispersal of farmland control toward the smaller sizes of farms in recent years. Changing technology has enabled a farmer to operate more land than previously--mechanical power instead of animal power and larger machines have particularly operated in this direction. Economic pressures have pushed farmers into operating as much land as they could. While the number of farms was shrinking so greatly, the number of hired workers was also shrinking about proportionately. The year-round hired man, so common in Corn Belt farming a generation ago, has virtually disappeared. Increasingly, farmers are able to perform nearly all farm operations with their own labor, perhaps hiring some temporary help during peak harvest season.

These data on changing numbers of farms and on changing acreages of land by farm size do not deal with the matter of social, economic, legal, and political "control" over farm resources. Machinery dealers, fertilizer suppliers, feed merchants, bankers, marketing and processing firms, and many others exercise influence over farmers' decisions. There are no comprehensive national data on the extent of those influences. We do not know how often "influence" crosses the line to "control." Some observers believe that farm operators have lost a substantial degree of control over their farm business. Others are not so sure--farmers have always been subject to forces outside their own control.

These data on numbers and acreages of farms of different area (all land, not merely cropland) suggest but do not unequivocally prove that

there has been a substantial trend toward concentration of farmland ownership in the past forty or fifty years. Operating units are fewer and larger; probably ownership units are also.

The changes in farm numbers have sociological consequences, of course. No one familiar with the share-cropping of an earlier generation can bemoan the demise of this system of farm operations. There has been some rise of truly large-scale farming, often called "corporation" farming; but many of the corporations engaged in agriculture are family owned, the corporate form of ownership being adopted to facilitate transfer of property by inheritance. The large vegetable and fruit farms, whether corporately or individually operated with marketing contracts to large corporations, are indeed something rather new. Poultry farming is now mostly moderately large business enterprises, operating under contract to processors, instead of the small flocks which produced the farm housewife's income in a bygone day. And there are many other changes in ownership, operating, credit, and marketing arrangements; yet the dominant picture is the continuation of the farmer-operated farm, increased in area to take advantage of new technologies. Many of the farms with the very largest acreages of land are ranches, but a ranch of several thousand acres is often not more than a family-size operation. The large acreage ranch has existed in the West for well over 100 years.

Data on trends in forest land ownership are less complete than are the data on farm ownership. Forest firms have increased the area of forest land they own from about 60 million acres in 1952 to about 69 million acres in 1977, or by about 15 percent.[11] In addition, there has been a substantial merger movement among forest industry firms, which has increased concentration of ownership within this group.[12] The forest industry firms have also leased substantial areas of forest land from nonindustrial private forest owners. Much of the forest land is within farms and many of the changes in farm ownership have involved changes in forest land ownership.

Many persons well informed about the forestry situation in the United States believe that in recent years there have been two trends in ownership, in opposite directions, among the nonindustrial private owners. It is generally believed that the larger owners have been increasing their holdings. At the same time, there has clearly been some fragmentation of

forest landholdings, perhaps a great deal of it, as many people have sought to own a tract of forest for their personal enjoyment or as a means of speculation in land. This may have resulted in subdivision of holdings that were already small. While informed opinion fairly well agrees about these two trends, specific data over a period of years are nonexistent or such data as do exist have dubious meaning because of differing definitions or differing methods of data collection, and hence there is not complete agreement about the magnitude of these two trends.

Specific data on trends in ownership of mineral resources are still less available than data on trends in ownership of other natural resources. Development of oil, gas, coal, hard-rock minerals, and other minerals these days requires a great deal of capital, much technical and managerial skill, and large risks of gain and loss. Firms undertaking such development naturally enough wish to own or to have under long-term leases relatively large areas of land with estimated substantial content of minerals. The day of the prospector, travelling with his burro and washing the gold out of the gravel with simple tools and machines, is clearly gone. Modern prospectors operate from jeeps or pickups, have Geiger counters, and understand basic geology; often their role is to identify some area which has sufficient promise to interest a large mining firm. Mining of coal by the small miner who hauled the coal off to market with his team and wagon is equally obsolete. Mining of metal-bearing ores in small mines, each with a comparatively few men, with sale of the ore to a smelter, has also declined greatly. Some of the larger minerals firms are interested today in more than one kind of energy--oil firms interested in coal, for instance.

There is reason to believe that the ownership or control under long leases of minerals has become more concentrated in the past generation but specific data to measure this trend are lacking.

Inclusive and reliable data on trends in water ownership are less available than are data on present water ownership but, based on some of the economic developments for which there is information, some judgments can be reached. In general, the concentration of all farmland ownership noted earlier extends to a similar concentration in ownership of irrigated land and thus to a similar concentration in water ownership. Rights to water for purposes other than irrigation have almost surely become more

concentrated also. The large-scale hydroelectric power, flood protection, navigation, municipal water supply, and other nonirrigation uses of water have meant a more concentrated ownership of water, or of some rights to water today than a generation ago. The various federal water development programs have operated in this direction. The efforts in federal reclamation law, dating from 1902, to limit use of federally subsidized water to moderately small irrigated farms has not been wholly successful, in part because they have never been vigorously and consistently pushed. There is today very little unappropriated water in the West and little or none of it can be developed and used by small-scale landowners.

While the concern of this conference is with rural lands, the picture of changes in natural resource ownership would not be complete without reference to the considerable increase in home ownership, primarily in cities and towns. From less than half of the housing units owned by their occupants prior to World War II, the proportion has risen to about two-thirds today. Millions of families and individuals have been able to buy houses or apartments under terms which are at least bearable, thereby providing themselves with better shelter at more modest cost and at the same time securing substantial protection against loss of wealth in inflationary times--indeed, often increasing their wealth by the favorable combination of rising prices of their housing and fixed debt arising out of their home purchase. In modern America, economic opportunity and provision for old age do not lie only or primarily in natural resource ownership; much less do they lie in the ownership of large areas of land.

Rural Development

The term "rural development" connotes something more than simple, locally initiated or self-initiated efforts to stimulate economic and social change or growth. The connotation is of some effort from outside of the local area or outside the group in need of help aimed at assisting disadvantaged and poor local people to attain more income and better living conditions than they can achieve for themselves, given their personal characteristics, their wealth, and the local environment. The element of input from outside the local area or from outside of the local family or other group is a critical component.

Any group or social effort to aid poorer people, whether rural or urban in their location, immediately raises a host of ideological, philosophical, and political issues: how much help should be extended to poor people? why any help from others? what claim do they have upon the larger society? what right or what obligation does the larger society have to help the poor and unfortunate? how to define "poor" and "unfortunate"? are good intentions of the aid-givers enough? And other questions could be raised. There is no intent to explore these issues fully here.

In the final analysis, the persons or groups helped must make the decisions and accept the responsibility for their own actions and their destiny. The outsider may advise, may offer help in one direction but not in others, and otherwise seek to influence the actions of the recipient group. But the outsider can never take full responsibility for the actions of the aided person or group. This is in one sense obvious and indisputable. Yet it is precisely because the aided person or group cannot alone cope with problems that the aid of the outsider is sought. The latter can scarcely avoid some responsibility for action or inaction.

Immediate and practical issues must always be raised: whatever the rationale and whatever the scale of help, by the larger society to its poorer members, or by the relatively well-off to the relatively poor, how can that help most effectively be extended, both to accomplish the goals of the donor and to really aid the recipients?

A number of devices have been tried in the past by governmental and private efforts to aid poor or lower income people. There has been the grant or outright gift of money, typically for a specific purpose but sometimes without strings attached. There have been special subsidies or governmental aids to lower income groups, for many purposes. Sometimes these have been subsidized loans--subsidized in terms of low interest, longer repayment, low borrower equity, or more tolerance about defaults. Special tax breaks have been used but, on the whole, less frequently. In almost all situations, aid from government or from private sources has included some input of "specialists" to "aid," educate, or guide the lower income group. All of these and perhaps other devices have been used. in numerous combinations, for urban, rural, and farm programs. In some situations, such aids may be effective, in other situations the prospects for success are less promising. There have been and doubtless are today

some groups or some individuals whose economic and social situations are truly marginal, so that a comparatively little outside help may provide both the spark and the margin for effective self-realization. The best form of outside help varies so much, from situation to situation, that reliable generalizations simply cannot be made.

The earlier definition of natural resources has special significance in this connection. If natural resources are not simply physical features such as land, minerals, forests, and water but also entrepreneurship, capital, and labor to be transformed into productive assets, then the physical features alone are insufficient. If the necessary input factors are unchanged, then more physical features may have minimal or dubious value; such value as they have to the recipient may be small or transitory. Simply providing more land, or more machines, or more livestock, or better houses to rural poor may do relatively little for them over the longer run unless their ability and capacity to convert physical features into productive assets can also be increased.

The outsider seeks explicitly or implicitly to impose his or her standards and criteria upon the recipient, typically in the sincere conviction that those standards and criteria are necessary if the recipient is to attain the goals desired by both. The recipients may be poor, in a situation which neither they nor the donor feel is adequate to achieve their goals without some help, and yet the poor have their own standards and their own criteria, as well as their own dignity and pride. How far and how fast does the donor agency, group, or person seek to change the recipients? How far does the answer depend on the age of the recipient--different for middle-aged adult than for young adult or for adolescent? There are clearly major moral issues here, but also highly practical ones.

In many situations, but especially when outright grants are given by public agencies, it is necessary to supplement the aid with administrative regulations about what may be done with the aid. The same may be true for at least some subsidized loans. The recipients may have to be prevented from using the gifts or loans in ways the donors or lenders were unwilling to agree with. The latter, naturally enough, feel that their aid should not be "wasted" in ways other than those they intended. Does the minimum budget of the relief client include some allowance for semi-luxuries, for alcoholic drinks, for tobacco, for drugs, for beauty shop services, for

entertainments of many kinds, for instance? If the subsidized loan is to purchase real estate, farm machinery, or other capital items, how is the recipient to be prevented from selling this property, with or without paying the loan, and using the funds so obtained for some wholly different purpose? The variety of situations and of questions that has arisen in practice is almost infinite. Inevitable and unavoidable as administrative regulations may be, they are surely not without major problems in application.

For those of us familiar with federal programs of the past fifty years, talk about subsidies, technical aid, and other assistance to low-income rural people evokes memories of the early Farm Security Administration, especially in the New Deal days and through World War II. This was the first major federal program to directly aid lower income farm and rural people, it continued the longest, and it reached the largest number of people. Subsidized credit was a major part of it, but technical assistance and guidance, through farm planning and budgeting, were also major parts. Typically, relatively young, often college-trained but not always farm-experienced supervisors worked with farmers, who typically were older, with far more practical farm operation experience but also typically not only poor in the sense of owning few resources but also poor as business managers. Predictably, there were many clashes of personalities and cultures, as well as many instances of genuine cooperation and mutual respect. Undoubtedly, thousands of farmers were aided to achieve higher incomes and better living under the program than they could have achieved without it. In the retrospect of history it appears that the program was more an alleviation of the disadvantages of rural poverty than it was a cure. The data presented earlier clearly show that this and other programs of the day did not prevent the enormous reduction in numbers of small farms that has occurred in the past thirty years. Farm budgeting and planning, with subsidized credit, may have aided the family then farming to have a better income and better living but it did not ensure the long-run survival of most of the small farms.

One may be sympathetic with the rural poor, yet hard-headed about what to do and how to do it, if an effort is made to help them. In the interest of the recipient as well as in the interest of the donor, programs should not be undertaken where the prospects of failure are unnecessarily high;

or, to put it the other way around, programs should seek the maximum prospect for success. Some mistakes and some failure are inevitable but every effort should be made to keep them to a minimum. Accessibility to more and better natural resources may be a necessary part of any rural development program, but alone it is not enough.

Summary and Conclusions

The major conclusions of this long paper can be briefly summarized (and somewhat oversimplified) in a few points:

1. In the United States today, and as far back as we have reasonably reliable evidence, there exists a wide disparity in individual wealth and income. Some people are poor in an absolute sense--lacking enough food, or good enough shelter, or proper medical attention, or other necessities to the extent that their survival and the survival of their children is at risk; many more are poor in a relative sense--lacking those features of life which their more fortunate fellow citizens have and which add so much to the enjoyment of life.

2. Most poor people possess few natural resources such as land, water, minerals, and forests. There are some exceptions; for instance, some Indian tribes own potentially valuable property but most members live in poverty. The poor people lack capital--by definition, poor means lacking in capital. But many, perhaps most, also lack managerial competence to make the most of what they have, and still more lack competence to make productive use of more capital or more resources. As Hathaway said so well twenty years ago, they are "poor but not always underpaid."[13] More than the average persons in the whole society, the poor are likely to have health problems, disabilities, poor education, and poor housing.

3. Poor people are often caught in a spiral of low wealth, low income, few natural resources, and serious personal problems of various kinds; and these in turn mean low income and low wealth.

4. The poor, whether rural or urban, often need help to escape this spiral of low income, low wealth, and so forth. Sometimes groups of poor people are able to help each other to achieve some degree of escape from the poverty spiral; more commonly, help from some outside group or

organization is necessary. Two major cautions to the help-giving agency or person are basic: (a) simply giving more natural resources by gift, subsidy, or in another way may not help much, unless the capacity to use those resources can be increased through other forms of help; and (b) do not expect too much too quickly; poverty problems are deep seated and there is no quick or easy fix. There is no need for despair but there is great need for realism.

Appendix: Collection of Data for the USDA Study on Land Ownership

As in most other statistical inquiries, the way in which the data were collected is critical to an understanding and appraisal of the results of this study. Briefly, the Soil Conservation Service, as part of its conservation needs inventory, developed a stratified random sample of the land in the United States. Points were established in every county on the basis of sample land units, mostly 160 acres in size, and a specific point established within each unit. About 70,000 points were established. Omitting those which fell on public land (federal, state, and local government) and on land held in trust for Indians, about 57,000 points on privately owned land remained. Surveys of landownership on about 46,000 of these were conducted by the Economics, Statistics, and Cooperatives Service of the USDA. More than 11,000 points were "not selected in followup subsample" because "of budget constraint." For about 5,000 points, names and addresses of owners could not be obtained by local USDA personnel (who were generally familiar with local land records and with local landownership). This illustrates some of the problems of resource ownership studies. Data were obtained by a combination of mailed questionnaires, telephone interviews, follow-up questionnaires to those not replying the first time, and follow-up personal interviews where possible from those not responding to previous inquiry.

The extent of the response was, in general, very good--surprisingly so to those of us who had always felt that non-response would be a major problem in landownership studies. In all, slightly more than 37,000 usable questionnaires were obtained for privately owned land. Nevertheless, there were outright refusals for about 5,000 points, inaccessible owners for over

3,000 points, as well as the more than 11,000 points not followed up. Regrettably, no analysis was made, or at least none reported, of the differences in data according to the date or ease of data collection, which might have thrown some light on the character of the refusers and the nonrespondents. Experience with questionnaires strongly suggests that refusers and nonrespondents were not random persons; that, instead, they have special characteristics that differ considerably from the characteristics of those who respond; and that also there may well have been significant differences among those who responded first, those who responded to a follow-up inquiry, and those who were personally interviewed. One hopes that the reported data (discussed below) are a fair representation of actual land ownership in the United States but the fact that these data are a sample from a larger sample should be kept in mind constantly.

Data from the thousands of points for which data were obtained were expanded into state, regional, and national totals, by ownership and other groupings, in a manner which was generally fully acceptable statistically. The data reported in the publication, and hence the data used in the paragraphs which follow, are for the estimated whole population, and not merely the sample numbers. The 37,000 usable questionnaires are the basis for the estimate of nearly 34 million landowners--an expansion factor of nearly a thousand. The results, as later comments will suggest, may be more accurate as to land areas than they are to numbers of persons or other landowners, and perhaps more accurate as to percentages than as to absolute magnitudes.

The survey generally avoided the larger urban areas, although there seems some ambiguity about how closely it approached the cities through their suburban outliers. The field inquiry seems to have been somewhat inconsistent in the minimum acreage per tract for which data were obtained. The study reports (p. 27, Lewis) slightly more than 21 million "residential-commercial" owners in rural areas, each with one acre or more, who had a total of 48 million acres, or about 2 1/4 acres per owner; since there are 55 million owner-occupied single family homes in cities, towns, and rural areas, each with its own tract of land, and many millions of other tracts used for residential rental or multi-family use and more millions of tracts for commercial and industrial use, it is evident that--at least as far as numbers of landowners are concerned--the survey was far from fully inclusive of all urban and rural land in the United States.

Although the survey asked respondents about the extent to which some rights to the land (mineral rights, particularly) were "held by others" and about the extent to which the land had major easements attached to it, the replies suggest that many owners must have been very ill-informed on this matter. In total, there were nearly 5 million "no responses" and slightly over 5 million "don't knows" to these questions, with only slightly more than 6 million positive answers. While the acreages in each category are not reported, the numbers of owners reporting less than fee simple ownership strongly suggest that the acreages they probably own are very much less than we know from other sources have less than fee simple ownership today.

Thus, the survey generally was less complete, especially as to numbers of owners, for the residential-commercial uses of land and for the ownership of minerals than it was for more truly rural land used for agriculture, forestry, and similar land uses.

Notes

1. James A. Lewis, Landownership in the United States, 1978, Agriculture Information Bulletin No. 435 (Washington, Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, April 1980) p. 2.

2. Gene Wunderlich, Facts About U.S. Landownership, Agriculture Information Bulletin No. 422 (Washington, Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, April 1979) pp. 12-15.

3. Erich W. Zimmermann, World Resources and Industries: A Functional Appraisal of the Availability of Agricultural and Industrial Materials, revised edition (New York, Harper & Brothers, 1951) pp. 814-815.

4. Harold J. Barnett and Chandler Morse, Scarcity and Growth: The Economics of Natural Resource Availability (Baltimore, Johns Hopkins University Press for Resources for the Future, 1963) p. 244.

5. Marion Clawson, "Systems Analysis of Natural Resources and Crop Production," in Physiological Aspects of Crop Yield, Jerry D. Eastin et al., editors (Madison, Wisc., American Society of Agronomy and Crop Science Society of America, 1969) p. 3.

6. Paul W. Gates, "The Homestead Act: Free Land Policy in Operation, 1862-1935," in Land Use Policy and Problems in the United States, Howard W. Ottoson, editor (Lincoln, Neb., University of Nebraska Press, 1963).

7. Lewis, Landownership.

8. Thomas W. Birch, Douglas G. Lewis, and H. Fred Kaiser, The Private Forest-land Owners of the United States, Forest Service Resource Bulletin WO-1 (Washington, Forest Service in cooperation with Natural Resource Economics Division, Economic Research Service, United States Department of Agriculture, 1982).

9. In addition to various preliminary and statistical reports, and in addition to articles in professional journals by USDA staff members, several special reports were issued. Linda K. Lee, Linkages between Landownership and Rural Land, Agriculture Information Bulletin Number 454, February 1983, and Linda K. Lee, Potential Cropland, The Ownership Factor, Agricultural Economic Report Number 476, February 1983, each published by Economic Research Service, U.S. Department of Agriculture, are two examples of special reports. A series of staff reports were prepared and published by the Natural Resources Economics Division, Economics and Statistics Service, U.S. Department of Agriculture, in which those respondents to the general land ownership survey who had reported particular situations were contacted in follow-up surveys to ascertain more information on the particular item

under study; such follow-up surveys were made for additions to cropland, cropland acreage reduction, land purchases and acquisitions, land sales and transfers, land clearing investment, drainage investment, investment in conservation structure, changes in conservation practices, irrigation investments, and irrigation disinvestments. These special reports are individually brief but in total contain a great deal of useful information.

10. Marion Clawson, "Aging Farmers and Agricultural Policy," Journal of Farm Economics, vol. 45, no. 1, February 1963, pp. 13-30.

11. Forest Service, An Analysis of the Timber Situation in the United States, 1952-2030, Forest Resource Report No. 23 (Washington, Forest Service, U.S. Department of Agriculture, December 1982.)

12. Dennis C. LeMaster, Mergers Among the Largest Forest Product Firms, 1950-1970, Bulletin 854 (Pullman, Wash., College of Agriculture Research Center, Washington State University, August 1977).

13. Dale E. Hathaway, Government and Agriculture: Public Policy in a Democratic Society (New York, MacMillan, 1963).

COMMENTS ON THE CLAWSON PAPER

by Robert G. Healy

To no one's surprise, Marion Clawson has done a creditable job of summarizing what we know about the distribution of ownership of land and other natural resources. I suppose I could add a few sources of information to those Marion cited: the very interesting reports on foreign ownership of agricultural land made possible by the Agricultural Foreign Investment Disclosure Act; the regional reports of the USDA landownership study (which Marion cites but does not discuss); the studies of large-scale owners in Maine and California done in the early 1970s by associates of Ralph Nader; the multi-state study done in 1980 by the Appalachian Land Ownership Task Force; county-level studies done by myself, by Gene Wunderlich at the Economic Research Service (ERS) and by researchers at Ohio University, Penn State, and Cornell, to name just a few; and finally the greatly expanded knowledge of federal land and resource holdings that has been compiled in recent years, some of it aided by Marion's own work.

I find very little in these studies to dispute Marion's overall conclusions: that the ownership of rural land in the United States is concentrated in the hands of a small, but by no means tiny, number of owners; that there is still a substantial number of medium-sized "family" farms; that corporate ownership, while important regionally, is not dominant nationally; and that we now know much more about the ownership of land than about the ownership of non-land resources.

I am impressed by how much the breadth of Marion's presentation depends on data which were unavailable only three years ago, before the Department of Agriculture undertook the first comprehensive study of rural landowner- ship since the 1940s. The landownership survey and the subsequent ERS and Forest Service studies relating ownership to land use offer a national context for the many regional studies done over the years.

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It seems clear to me that we are emerging from a long period of statistical darkness with respect to the ownership of natural resources. It is no longer realistic to complain, as one could quite accurately less than five years ago, that "no one knows who owns rural America." Data gaps persist, including some very important ones, but the focus of research on resource ownership is shifting from "What's going on?" to "What does it mean?" I think that we have not gone nearly so far as we might along that second path.

What then is the meaning of the ownership concentration numbers that Marion has cited? My first question, after looking at the Lorenz curve (relating cumulative percentage of land value to cumulative percentage of owners) in Marion's paper, was to ask how the concentration of land ownership compares to the concentration of ownership of other important assets. I chose to compare the amount of any given asset owned by the top 1 percent of the total population. The distributions are as follows--the top 1 percent owns:[1]

7.0 percent of all life insurance
13.5 percent of all cash
15.0 percent of all real estate

24.0 percent of total private assets

56.0 percent of all corporate stock
60.0 percent of all bonds

58.0 percent of land reported in the USDA ownership survey

88.0 percent of farm and ranch land

(The figures above make the somewhat heroic assumption that non-response did not vary with size of holding.)

This is a remarkable concentration of ownership. Now I daresay that other assets are even more highly concentrated among the population. I am quite sure for example that 1 percent of the population owns 100 percent of

[1] Statistical Abstract of the United States, 1981, p. 453; James A. Lewis, Landownership in the United States, 1978, USDA Agriculture Information Bulletin No. 435 (Washington, D.C., GPO, 1980); unpublished USDA data.

certain specialized classes of assets, such as Old Master paintings. But unlike Old Master paintings, how the ownership of rural land is distributed is not a trivial question. According to the USDA landownership survey, the total value of all reported holdings (1978) was $1.5 trillion--and if one adjusts for the nonreporting of value for 40 percent of the acres--a total value well over $2 trillion. That figure was more than three times the value in 1978 of all stocks listed on the New York Stock Exchange. Considering only farm and ranch land, one gets a total value of $716 billion, or about the 1978 value of New York-listed stocks. I suggest that the concentration of landownership is, of nothing else, an important phenomenon.

A second observation is that, given this extremely skewed distribution, the land price inflation of the period 1950-80 must have had some significant impacts on the distribution of wealth. Inflation may not have affected the overall distribution of wealth in society (remember those among the wealthy 1 percent who foolishly held 60 percent of all bonds) but inflation has certainly shifted hundreds of billions from one group of wealth claimants to another. Marion mentioned this factor in his paper; yet I think there is considerable scope for empirical research on the relationship between inflation and the distribution of wealth. The post-1980 slump in land prices and the corresponding increase in the value of stocks and bonds offers a parallel opportunity for looking at how deflation (or at least a change in the expected rate of inflation) affects how wealth is distributed.

But the concentration of wealth is only one aspect of the concentration of resource ownership. Perhaps equally important is the way that resource ownership concentration affects the distribution of power among individuals in society. We know quite a lot about the relationship between resource ownership and some kinds of power; about other kinds of power we know little or nothing.

Consider, for example, market power. At least theoretically, a sufficient concentration of resource ownership should give the owner power over prices, either as a monopoly seller or a monopsonist buyer. On the national level, it is hard to think of resources for which this is true, but we know very little about ownership concentration and local market power. For example, how important is concentrated timberland ownership in

giving paper companies the power to hold down stumpage prices? Does what market power they have stem from a monopoly over the processing facility, or is ownership of a land base also crucial--if only to discourage other firms from building a competing mill?

How does concentrated resource ownership affect the concentration of political power? Concentrated land and mineral ownership in Appalachia has been alleged to be associated with lax state regulation of mining and timber harvest practices, with below-market assessment of resource-bearing properties for tax purposes, and with anti-union policies. Concentrated land and water ownership in the West is also associated with political power for the owners. It may well be that a skewed distribution of rural wealth is less important for its direct economic effects than for its impact on the way that the political process distributes wealth and favors.

Another kind of power is the power to allocate resources among alternative uses. As an economist, I subscribe to the believe that expected profitability is the single most important determinant of how privately owned land and resources are used. Yet many studies have indicated that the structure of ownership is also very frequently associated with how resources are used, if only because owners differ in their access to information and their ability to realize scale economies.

Even though income from natural resources may be a relatively small proportion of a rural locality's total income, it may be a much larger component of its economic base, and there may be very important linkages with other activities. Decisions about how intensively timber will be managed, about the degree of mechanization in agriculture, and about whether or not a mineral resource will be developed are (within the limits set by expected profitability) the prerogatives of the resource owner. These decisions not only affect the distribution of income from the resource itself, but they can affect the community's entire course of economic development.

Let me give three brief examples. In his famous study of two communities in California's central valley, Walter Goldschmidt found substantial differences in community economic structure, which he argued were directly related to the differing structure of agricultural

production, a structure that arguably was related to the differing structure of resource ownership.[2] His findings have since been replicated for a larger sample of communities. A second example: there is suspicion, though not much evidence, that the degree of interest in erosion control may be linked to ownership structure. In this case, the difference may not be between large and small ownerships, nor between corporate and noncorporate owners, but between resident and nonresident owners. A third example: there seem to be substantial differences in the southern states between the forest products industry and the nonindustrial private owner of forestland with respect to investment in reforestation after harvest and investment in various forms of intensive silviculture. Communities with a large proportion of their land in industrial forest may therefore have more forest-related jobs and greater ultimate forest output than communities dominated by nonindustrial owners.

In conclusion, I reiterate my hypothesis that ownership does represent power, both within the market and outside of it. For the first time in several decades, we know at least the outlines of the structure of rural resource ownership, particularly with respect to land. I think that it is now time to take a harder, and more empirical, look at the links between that structure and the distribution not only of wealth, but of the various forms of power which I have described.

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[2] Walter Goldschmidt, As You Sow: Three Studies in the Social Consequences of Agribusiness (Montclair, N.J.: Allenheld Osman, 1978).